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ORIGINAL

Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, DC 20554

In the Matter of	)	
	)	
Advanced Television Systems	)	MM Docket No. 87-268
And Their Impact Upon the	)	
Existing Television Broadcast	)	
Service	)	

To: The Commission

PETITION FOR RECONSIDERATION

Pursuant to Section 1.106 of the Rules, Fox Television Stations Inc. ("Fox") hereby petitions for reconsideration of limited aspects of the Sixth Report and Order ("R&O") released April 21, 1997 in the above-referenced docket, as detailed below.

As the owner of twenty-two television stations, Fox, on behalf of its millions of viewers nationwide, has an enormous stake in the outcome of this proceeding. As we have stated previously in comments, in general, we are in accord with many of the assignment and allotment principles developed through the ACATS process, and repeatedly endorsed by the Commission and the many parties participating in this lengthy proceeding, e.g., use of terrain-sensitive propagation models to produce paired NTSC/DTV assignments that attempt to replicate and/or maximize stations' NTSC coverage areas to the greatest extent possible, while preserving existing NTSC service. Additionally, we endorse many of the points made in the Petition for Clarification and Partial Reconsideration submitted by the Association for Maximum Service Television and Other Broadcasters, in particular, the importance of preserving existing NTSC service from interference during the transition to DTV. However, as elaborated below, the DTV Table of Allotments set out in Table I of the R&O fails to achieve the stated objectives in certain cases where the Commission failed to follow its spacing rules, failed to maximize DTV power and/or chose to utilize low-band VHF channels DTV assignments.

This Petition urges the Commission to review its proposed DTV Table of Allotments and to take the time necessary to correct competitive inequities and significant interference conditions.[1] For example, in addition to the instances of interference to Fox stations discussed herein, there are a number of cases where stations are placed at a competitive disadvantage, either because there has been a failure to replicate existing interference-free coverage within a station's DMA or where, for whatever reason, other stations in the DMA have been given DTV allocations

[1] Fox also incorporates by reference its previous filings in consection with the Sixth Further Notice of Proposed Rulemaking in this Docket, which are attached hereto as Exhibit A.

that extend their service. Los Angeles provides a good example of this concern. A number of stations there do not achieve replication. For example, Fox's KTTV's DTV coverage will be 5.9 percent less than its present NTSC service area, even though there appears to be no engineering reason to prevent its increasing DTV power to 1000 kilowatts, instead of limiting it to 659.2 kilowatts.

I. FURTHER ADJUSTMENTS IN THE BASIC PLANNING FACTORS ARE REQUIRED IN ORDER TO IMPROVE THE RELIABILITY OF THE DTV TABLE OF ALLOTMENTS, MINIMIZE DISRUPTION TO EXISTING NTSC SERVICE AND MAXIMIZE DTV SERVICE TO THE PUBLIC.

A. The Use of a 7 dB Receiver Noise Figure for UHF Channels Cannot be Supported by the Record.

Contrary to the discussion at paragraph 187 of the R&O, Fox did not recommend in our comments that the Commission assume a 7 dB noise figure for UHF. While Fox acknowledged that improvement in receiver noise temperature is desirable in theory, particularly because it would allow for UHF power levels 50 percent lower than those permitted by use of a 10 dB noise figure, Fox stated that, unless the Commission mandates minimum receiver performance standards, it is not prudent to assume 7 dB as a planning factor, because, absent a government mandate, there is no guarantee that future digital receivers will be manufactured to this specification.[2] Therefore, we continue to advocate basing the DTV Table on more realistic assumptions that were accepted by all participants in the ACATS process, including receiver manufacturers, and that (presumably) are based upon real-world data.

There simply is no factual basis in this record to support the belief that a 7 dB UHF noise sensitivity figure for receivers will be achieved. Recent conversations with receiver manufacturers in connection with Fox's DTV buildout have served to reinforce this view. 7 dB is overly optimistic and would be difficult to maintain in a mass production environment, absent a government mandate. Yet, this assumption is of critical importance to the Commission's DTV allotment process. If it is in error, the Commission's coverage calculations are overly optimistic, thereby depriving viewers of service that they enjoy today. Moreover, even if DTV receivers were to meet the assumed 7 dB noise figure, the Commission fails to allow for real-world circumstances, where in the vast majority of television installations there are further losses caused by splitters and video cassette recorders. Accordingly, rather than merely assuming that a 7 dB noise figure will be achieved, it is imperative that the Commission either develop a record to support this conclusion or require receiver manufacturers to design tuners that perform

[2] See Exhibit A.

consistently with the Commission's planning assumptions. Absent either of the above, it is imperative the Commission return to the 10 dB receiver noise figure and base its power calculations on that assumption.

B. DTV Power Limits Should Apply Only at or Above the Mean Radio Horizon.

Mechanisms (e.g., beam tilt) used to improve a station's DTV service by increasing power below the radio horizon should not be of concern in terms of interference to other stations. Therefore, DTV stations should be permitted to increase power below the radio horizon in order to improve service to local viewers without risking objectionable interference to stations in other markets. The maximum ERP limits in the DTV Table should apply only at or above the annual mean radio horizon and only at azimuths that encompass the DTV service area and the NTSC Grade B contours of other stations that are below the minimum separations set forth in the new sections of Part 73. In no event, however, should ERP exceed 4.0 megawatts at any azimuth or elevation. Engineering a station's coverage pattern based on interference to other stations has worked well for AM radio and also should prove valuable for DTV. This measure would maximize station coverage and service to the public without increasing interference to new DTV or existing NTSC stations.

C. The Commission Should Develop an Emission Mask for NTSC Stations Operating on Channels Upper Adjacent to DTV Stations.

As we urged previously, the Commission should develop a lower side band emission mask for NTSC stations operating within 100 kilometers of lower adjacent DTV stations operating on lower adjacent channels. This minimizes interference and therefore would allow more efficient use of the spectrum. Packing more stations into less spectrum has necessitated same-market adjacent channel assignments, which requires the development of new mechanisms to protect against new harmful interference. Just as the Commission has developed a mechanism for protecting DTV stations from interference from NTSC operations on upper adjacent channels, it is imperative that a similar protection be developed and applied in the case of DTV operations on channels lower adjacent to NTSC stations.

D. The Commission Should Require DTV Stations to use the Same Azimuth Antenna Patterns as Their NTSC Counterparts.

The DTV Table assumes that DTV operations will use the same directional antenna patterns in azimuth as their NTSC counterparts. In its planning, the Commission appears to have recognized that, in order to avoid interference, DTV operations must use the same antenna azimuthal pattern for DTV as for NTSC. See R&O at n's. 68 and 370. However, it is not entirely clear that Section 73.622 of the new rules requires this. The Commission should clarify on reconsideration that this will be required, absent a showing that no additional interference will be caused if a licensee elects to use a different DTV antenna azimuthal pattern from that of its counterpart NTSC operation.

E. Licensees That Must Construct a Third Station Should Receive Compensation From Auction Winners.

Not only are low-band VHF DTV operations susceptible to greater interference, but if these channels are excluded from the core spectrum in markets such as Washington, DC and Detroit, Fox will be required to construct a third television station as part of the transition to DTV. It is arbitrary to require stations such as WTTG and WJBK, and other similarly situated licensees, to incur the expense and disruptions in service associated with the construction of a third station. We urge the Commission to require new users of the recaptured spectrum to compensate licensees for moves of this type, as originally proposed in the Sixth Further Notice of Proposed Rulemaking in this proceeding.[3]

II. MODIFICATION OF THE DTV TABLE OF ALLOTMENTS IS REQUIRED.

We noted about 30 instances overall of short spacing (both NTSC/DTV and DTV/DTV) with regard to the 22 Fox stations. However, in most cases, further analysis revealed that the interference would not be overly destructive and could be tolerated in order to advance the Commission's objectives. However, in addition to the situation of KTTV in Los Angeles, which was discussed above, there are three egregious situations where the short spacing would destroy existing service within the station's DMA. These, along with two other problematic allocations, are discussed below, and preliminary solutions are suggested, with dual caveats: (1) until OET Bulletin No. 69 is available, our studies cannot be finalized, because we cannot know for certain that we are applying the Longley-Rice methodology as the Commission did; and (2) while our analyses do not reveal that the changes to the Table suggested by Fox would have any significant negative impact on other licensees, other licensees may propose different solutions just as acceptable to Fox and, for whatever reason, preferable from the other licensees' standpoint. For this reason, we offer substitute DTV channel allocations for the Commission to review as a preliminary matter only. We have not been able to coordinate with other affected licensees and do not believe that it will be possible to do so meaningfully until OET Bulletin No. 69 is available and we possess this tool to verify our initial analysis.[4]

Interference study maps are attached for the specific stations discussed below. In all cases, the mean "k" for the area under study was used. Where NTSC is the desired signal ("D"), a time availability for "D" of 50% of the time and of 10% of the time for the undesired signal ("U") was used. Where DTV is the desired signal, a time availability for "D" of 99% of the time

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[3] 11 FCC Rcd. at 13.

[4] As the Commission is aware, OET Bulletin No. 69 is essential to verify that alternative DTV channel assignments will work. Therefore, we respectfully request an additional 90 days after release of the Bulletin to verify that the alternatives suggested herein are workable and/or to evaluate other proposed solutions, if necessary. We also reserve the right to comment on the methodology used in Bulletin No. 69 within that 90-day period.

and for "U" of 1% of the time was used, on the assumption that for new DTV service to reach significant penetration levels as soon as possible, it must be available to the public around 99% of the time.

In some cases, studies were done using two propagation models: Longley-Rice and Free Space+RMD. Fox has found through comparisons with actual measurements that Free Space+RMD proves more accurate than Longley-Rice. Fox has found through comparisons with actual measurements that Free Space +RMD proves more accurate at predicting coverage and interference than Longley-Rice. Two receiving antenna types were used in our studies: "Grade I," which designates an indoor receiving antenna with dipole at three meters above ground level ("AGL"), and "Grade O," which designates an outdoor receiving antenna with gain and a front-to-back ratio at nine meters AGL. Nielsen DMA boundaries are shown as a solid red line on the maps. In these studies, Fox used the interference criteria set forth in Appendix B of the R&O.

A. WTTG, Washington, DC

WTTG was assigned DTV channel 6. But, inexplicably, three channel 6 NTSC stations are materially short spaced to WTTG's DTV assignment at 158 kilometers (Richmond, Virginia), 198.8 kilometers (Philadelphia, Pennsylvania) and 226 kilometers (Johnstown, Pennsylvania). These spacings are well below the Zone I requirement of 244.6 kilometers. Each of these existing co-channel NTSC stations in Richmond, Virginia, Johnstown, Pennsylvania, and Philadelphia, Pennsylvania will cause significant interference to WTTG's DTV coverage.

Exhibit B predicts this for an inside loop antenna and uses Free Space+RMD (Grade I). Exhibit C is for an outdoor antenna and uses Longley-Rice (Grade O). Exhibit D is for an outdoor antenna and uses Free Space+RMD. Exhibit E shows the current interference-limited coverage of WTTG's NTSC signal on channel 5. As can be seen from these studies, there will be considerable interference into WTTG's channel 6 DTV coverage, especially in parts of Frederick (64,980 TV households), Washington (46,410 TV households), Berkeley (25,910 TV households), Hampshire (6,840 TV households), Jefferson (14,250 TV households), Clarke (4,210 TV households), Fauquier (17,250 TV households), Stafford (25,920 TV households), Charles (37,020 TV households), Spotsylvania (32,390 TV households) and Morgan (5,090 TV households) Counties. In the aggregate, these counties represent approximately 280,540 television households, an unacceptably great number of homes to disenfranchise, even in part, from local television reception that they receive today. Moreover, WTTG's channel 6 DTV signal is likely to cause new interference to the channel 6 NTSC operations of WPVI in Philadelphia and WTVR in Richmond, and this will cause even more loss of existing service than we have documented here.

Additionally, there is likely to be interference to and from educational FM stations in the Washington, DC DMA, one of the potential problems with low VHF DTV channel allocations alluded to by the Commission at paragraphs 82 and 83 of the R&O. This could result in an even

lower NTSC/DTV replication percentage than the 82.9 percent figure predicted by the Commission in the R&O. Compared with its competitors, whose replication figures range from 96.9 to 99.8 percent, WTTG's viewers will be sadly disappointed with its DTV coverage.

For the reasons stated above, Fox asks that the Commission reconsider the assignment of DTV channel 6 to WTTG and to consider channel 19 or 63 as an alternative.

B. WNYW, New York, New York

WNYW operates on NTSC channel 5 in New York city. WTIC's proposed new DTV channel 5 allocation in Hartford, Connecticut will cause material interference to WNYW. Exhibit F illustrates this, assuming an indoor loop antenna and using Free Space+RMD (Grade I). Exhibit G assumes an indoor antenna and uses Longley-Rice. Exhibit H assumes an outdoor receiving antenna and uses Free Space+RMD. Exhibit I shows an outdoor antenna, using Longley-Rice. Exhibit J shows WNYW's interference-limited NTSC contours.

As can be seen from each of the DTV/NTSC studies, WTIC's DTV operation on channel 5 would cause material interference to WNYW's NTSC service, especially in Nassau (431,530 TV households), Suffolk (428,010 TV households), Westchester (321,420 TV households), Putnam (30,160 TV households) and Fairfield (304,460 TV households) Counties. In the aggregate, these counties represent approximately 1,515,580 television homes that would be deprived of NTSC service that they receive from WNYW today, were WTIC to operate on DTV channel 5. Additionally, FTS believes that WTIC's channel 5 DTV signal also would interfere with WCVB's channel 5 NTSC operation in Boston, Massachusetts, which would disenfranchise an additional unknown number of television homes in that market.

As mentioned above, the Hartford DTV channel 5 assignment is materially short spaced to WNYW at 147.9 kilometers, as well as WCVB, both of which are considerably below the Zone I requirement. Fox' analysis suggests that any of the following channels would be suitable as a substitute for DTV channel 5 in Hartford and would cause less interference than the current DTV allotment: 16, 28, 35, 44, 60 or 63.

C. WTXF, Philadelphia, Pennsylvania

WTXF operates on NTSC Channel 29 in Philadelphia, Pennsylvania. The proposed DTV channel 29 allocation for WMPB in Baltimore, Maryland will cause material interference WTXF's NTSC signal within its DMA. This is illustrated by Exhibit K, which shows an indoor loop antenna and uses Free Space+RMD as its propagation model, and Exhibit L, which shows an outdoor antenna and uses Longley-Rice.

Both studies reveal that there is material interference to WTXF's existing NTSC coverage, especially in parts of New Castle (175,640 TV households), Berks (131, 700 TV households), Salem (23,270 TV households) and Cumberland (77,510 TV households) counties. It should be

noted that, in the aggregate, these counties represent approximately 408,120 television households, again an unacceptably great number of homes to suffer loss of even a portion of their current local television service.

WMPB's DTV allotment on channel 29 is materially short spaced to WTXF at 146.8 kilometers, which is well below the Zone I requirement. Therefore, another DTV channel should be selected for WMPB. Fox' analysis suggests that DTV channel 65 would be suitable for WMPB and would cause less interference than DTV channel 29.

D. WJBK, Detroit, Michigan

WJBK operates on NTSC channel 2 in Detroit, Michigan. Proposed new DTV channel 2 allocations in Cleveland, Ohio for WKYC and for WWMT in Kalamazoo, Michigan could cause some interference to WJBK's NTSC coverage area, although this case is not as egregious as the three cases cited above. Exhibit M illustrates this.

In addition, not only are low VHF allocations susceptible to man-made noise, as recognized by the Commission at paragraph 82 of the R&O, it is likely that propagation anomalies connected with atmospheric conditions, such as Sporadic-E and ducting, which, in Fox's experience, also are relatively common at low VHF allocations, will cause further interference problems for WJBK. Therefore, we suggest that the Commission evaluate DTV channels 53 or 65 as a substitute for WKYC and DTV channels 26, 29, 32, 60, 61, 67 or 68 as a substitute for WWMT. Fox's studies reveal that any of the above channels would cause less interference than DTV channel 2 in Cleveland or Kalamazoo and would appear to be suitable, based on the limited information available to us.

E. WFXT, Boston, Massachusetts

WFXT operates on NTSC channel 25 and has been assigned DTV channel 31. WFXT has on file with the Commission a timely-filed application seeking relocation from its present antenna site in Needham, Massachusetts to the Hancock Tower in downtown Boston.[5] Consistent with its practice in this proceeding, the Commission did not assume WFXT's proposed relocation, either in location or DTV ERP, in the DTV Table. WFXT's application also sought an increase in NTSC power, which should have been taken into account in assigning WFXT's DTV power.

DTV channel 25 has been allocated to WNNE in Hartford, Vermont. As we have stated previously, WNNE must conduct its DTV operation using the same antenna azimuth pattern as its NTSC operation, or it will cause interference to WFXT's NTSC signal.

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[5]File No. BPCT-960702KU.

Because Fox's DTV allocation has upper and lower adjacent channel DTV allocations, we are concerned that building shadowing may cause interference from WABU's DTV operation, unless Fox is permitted to operate its DTV facility in the same location that it has proposed for its NTSC transmitter. WFXT's DTV allocation is adjacent to the channel 32 DTV allocation for WABU in Boston. If WFXT operates DTV channel 31 from its present site, WABU's channel 32 DTV facility will cause interference to WFXT's channel 31 DTV operation in downtown Boston, where field strength varies greatly due to the presence of tall buildings. If WFXT moves its antenna to the Hancock Tower, it will be virtually co-located with WABU, so that the WABU interference to WFXT's signal in downtown Boston would be alleviated.

It would be better engineering practice to avoid adjacent-channel relationships between stations in the Boston antenna farm area and those on downtown buildings.

IV. CONCLUSION

Notwithstanding the problems discussed above, Fox regards the Table of DTV Allotments as a remarkable achievement resulting from the cooperative efforts of government and industry over the past nine years. As evidenced by the DTV buildout commitments made by Fox and many others in the television industry, Fox and other broadcasters stand ready to bring digital television service to the public in as expeditious a manner as possible. We have attempted to identify herein only those components of the DTV plan that, if uncorrected, may impede timely public acceptance of DTV and seek herein only those modifications to the DTV Table that we believe are essential to our ability to continue to serve the public as we do today. Yet, any endeavor as global and complex as doubling the present number of television stations within less than the full amount of spectrum in use by television today must remain flexible and amenable to improvement. It is in this spirit that Fox asks the Commission to reconsider its Sixth Report and Order as outlined above.

Respectfully submitted,

FOX TELEVISION STATIONS INC.

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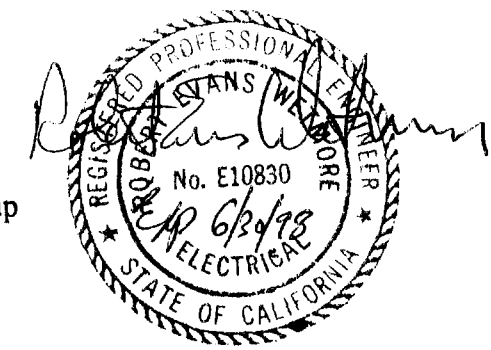
Engineering Consultants:

Andrew G. Setos
Executive Vice President, News Technology Group

R. Evans Wetmore, P.E.
Vice President, Advanced Engineering, News Technology Group



Neil Smith
Smith & Fisher
1233 20th Street, NW, Ste. 502
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June 12, 1997

EXHIBIT A

Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, DC 20554

In the Matter of	)	
	)	
Advanced Television Systems	)	MM Docket No. 87-268
And Their Impact Upon the	)	
Existing Television Broadcast	)	
Service	)	

To: The Commission

COMMENTS

OF

FOX TELEVISION

Introduction

Fox Television Stations Inc. (FTS) is the licensee of twelve television stations nationwide. FTS also has received Commission approval to acquire control of New World Communications Group (New World), which directly or indirectly owns ten additional television stations. Memorandum Opinion and Order in re Applications of NWCG (Parent) Holdings Corp. & NWCG Holdings Corp. and Fox Television Stations Inc., DA 96-1852, released November 7, 1996. Anticipating consummation of this transaction in early 1997, the Commission's DTV channel assignments for the New World stations were analyzed, as well as those of the FTS stations. FTS has not been able to complete a detailed an analysis of the "Modified DTV Table" being filed in response to the Notice today. We expect to address that table in detail in our reply comments.

For over seven years, FTS has participated on its own behalf and as a member of the Broadcaster Caucus in numerous activities of the ACATS and the ATTC and has been a signatory to the joint comments of multiple broadcasters previously filed in this docket, as well as filing comments on its own behalf on several occasions. FTS has joined in the Joint Broadcaster Comments being filed today in response to the Notice, dissenting to portions, on which we amplify in these separate comments. FTS anticipates continuing to be part of the collective efforts of our industry, with the Commission's support and oversight, to enter the digital era and enhance the quality and nature of the broadcast service that we provide to the American public.

In general, FTS agrees with many of the assignment and allotment principles developed through the ACATS process, and repeatedly endorsed by the Broadcasters, i.e., use of terrain-sensitive propagation models to produce paired NTSC/DTV assignments that attempt to replicate and maximize stations' NTSC coverage areas to the greatest extent possible, while preserving existing NTSC service to the greatest extent possible. It must be acknowledged, however, that this overall design necessarily embodies conflicting and mutually exclusive goals to a certain extent, i.e., efforts to achieve a universally optimal solution cannot overcome the laws of physics; moreover, such efforts are necessarily bounded by the extent of current technology.[1]

Additionally, as differently-situated parties inevitably will seek to promote different priorities, compromises must be made, either among industry members or, by default, by the Commission. The many risks and uncertainties attendant upon all aspects of the new digital operations mandate that every possible effort be made to design an assignment model that utilizes the most accurate and realistic assumptions. All participants in this process must be mindful of its sensitivity to the so-called butterfly effect, i.e., its exquisite dependence on initial conditions. In other words, local causes often have global consequences. It is in this spirit that FTS offers the following comments.

Discussion

Based upon our review of the Commission's proposals in the Notice, we believe that the Commission has done an excellent job of achieving the goal of replicating existing service areas with new DTV allocations; however, by utilizing average figures for the various parameters of stations' operations, rather than more precise values, and by violating its own average spacing requirements in some cases, it appears that replication will not occur, due to significant interference conditions, in certain cases.

Specifically, Fox performed studies using frequency and location-specific values for each of the Commission's proposed assignments for the FTS and New World stations and for their counterpart NTSC stations and found that in most cases existing service would be effectively replicated; however, four of the 22 existing NTSC stations that were examined would suffer significant interference from new DTV assignments:

WNYW	New York, NY	NTSC channel 5	DTV interference from Hazleton, PA
WTXF	Phila., PA	NTSC channel 29	DTV interference from Baltimore
WFLD	Chicago, IL	NTSC channel 32	DTV interference from Janesville, WI & Lafayette, IN

[1]The former always will be true; the latter is an evolving factor that permits speculation that technological advances will allow us to more closely approximate optimal solutions the future, assuming today's goals do not change.

WJBK	Detroit, MI	NTSC channel 2	DTV interference from Lorain, OH

The results of engineering studies illustrating the effects of each of these five interference from DTV assignments are attached to these comments.

Significantly, in each of these cases, the DTV assignments are short spaced under the FCC's own spacing rules. FTS recommends that the FCC assign other DTV channels to the interfering stations.

One DTV assignment, to New World station WJW, channel 4, Cleveland, Ohio, appears to have unacceptable levels of interference from existing NTSC stations in Detroit, MI, Buffalo, NY, Columbus, OH and Pittsburgh, PA.

It is imperative that the Commission evaluate situations such as these and find a cure to avoid the significant levels of interference that would have an impact on future service to the public.

As stated above, we have not yet completed similar analyses of the "Modified Table;" but we have identified a common difficulty that flows from the use of low-band VHF frequencies for transitional DTV channel assignments. In general, due to the crowded nature of this part of the band and the propagation characteristics of low-band VHF channels, we recommend that such channels should not be utilized for DTV assignments.[2] In particular, the assignments of DTV channel 6 to FTS station WTTG in Washington, DC and to New World station WAGA in Atlanta (both operate on NTSC channel 5), would be contrary to the public interest, because the DTV operations would appear to suffer significant interference from co-channel NTSC stations in other markets. Based upon our studies, such assignments would result in interference to existing co-channel NTSC stations in other markets, as well as suffer interference from co-channel NTSC stations in other markets, for several reasons:

- Low VHF signals travel significantly farther than those in higher bands, which causes interference to existing operations.
- Significant interference already exists within the low VHF band among the numerous NTSC stations operating there.
- There is more man-made noise in the low VHF band, which requires greater power to overcome.
- It is not economically practical to manufacture directional transmission antennas for VHF facilities.

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[2]Notwithstanding, non-collocated minimum facilities VHF DTV assignments may be acceptable on a case-by-case, "drop-in" basis where critically necessary and where adverse interference conditions would not result.

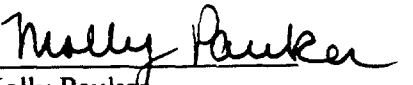
- Channel 6 may sustain interference from non-commercial FM radio stations.

Finally, we believe that, at this stage, using the ACATS-established noise figure of 10dB among the planning factors may be prudent, while continuing to attempt to improve to 7dB at UHF through the ongoing regulatory and negotiation process.

Conclusion

In light of the monumental complexity of the task with which the government and the industry have been grappling for nearly ten years, we find it remarkable that there is so much unanimity about so many details, as well as basic principles. The congruence of views in so many areas certainly overshadows the various differences. This fact should give all entities involved in the process of developing digital broadcast television reason to hope for a successful transition.

Respectfully submitted,



Molly Pauker
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November 22, 1996

ATTACHMENT

Planning Factors
(Low VHF)

1. Receive Antenna
    a. Gain: 6dB
    b. Front-to-Back Ratio: 8dB
    c. Lead-in Loss: 1dB
    d. Height above ground: 9 meters
2. TV Set Noise Figure: 10dB (6mHz noise bandwidth)
3. Desired (NTSC) to Undesired (ATV) Ratio: 34.4dB
4. "f" Sensitive Dipole Factor
5. Confidence Factor: >90%
6. Locations 50%, Time 10% for the undesired signal
7. Actual terrain along paths used (not roughness) and the value of K is the annual mean

ATTACHMENT

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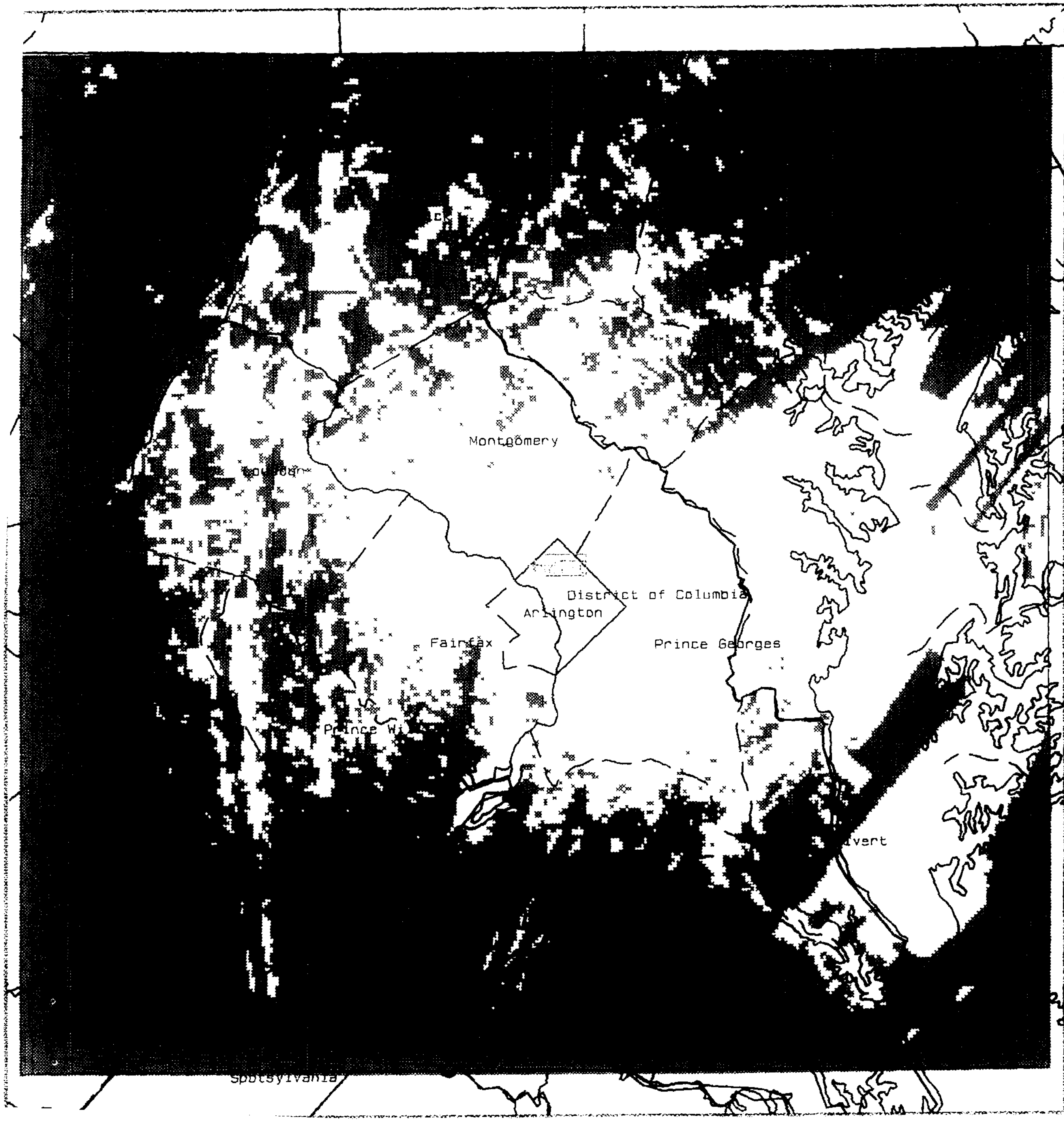


MSITE(tm):wttg-at

Propagation model: Free space - RMC
Time: 99.00% Loc: 50.00% Margin: 10.0 dB
Climate: Continental Temperate
Gndcvr: USGS-EDX database
Atm. factor: None
K Factor: 1.330
RX Antenna: Omni
Height: 3.0 mtrs AGL Gain: .0 dBd

C/I ratio - group 1 TXs to group 2 TXs

\> 1.8
X < 1.3

Minimum threshold level: -150.0 dBW

Site	AMSL (mtrs)	ERP (dBW)	Ant. (type)	Coordinates
WTTG	315.0	38.2[illegible]	OMNI	[illegible]
grp. 1	[illegible] MHz			[illegible]
WT[illegible]	21[illegible]	[illegible]	OMNI	[illegible]
grp. 2	[illegible] MHz			[illegible] 36.00
WJ[illegible]	665.0	49.50	OMNI	[illegible]
grp. 2	[illegible]5.0000 MHz			[illegible] 56.00
WP[illegible]	420.0	49.7[illegible]	OMNI	[illegible] 35.00
grp. 2	[illegible] MHz			[illegible]

EXHIBIT B

GRADE I "U" TIME = 1%

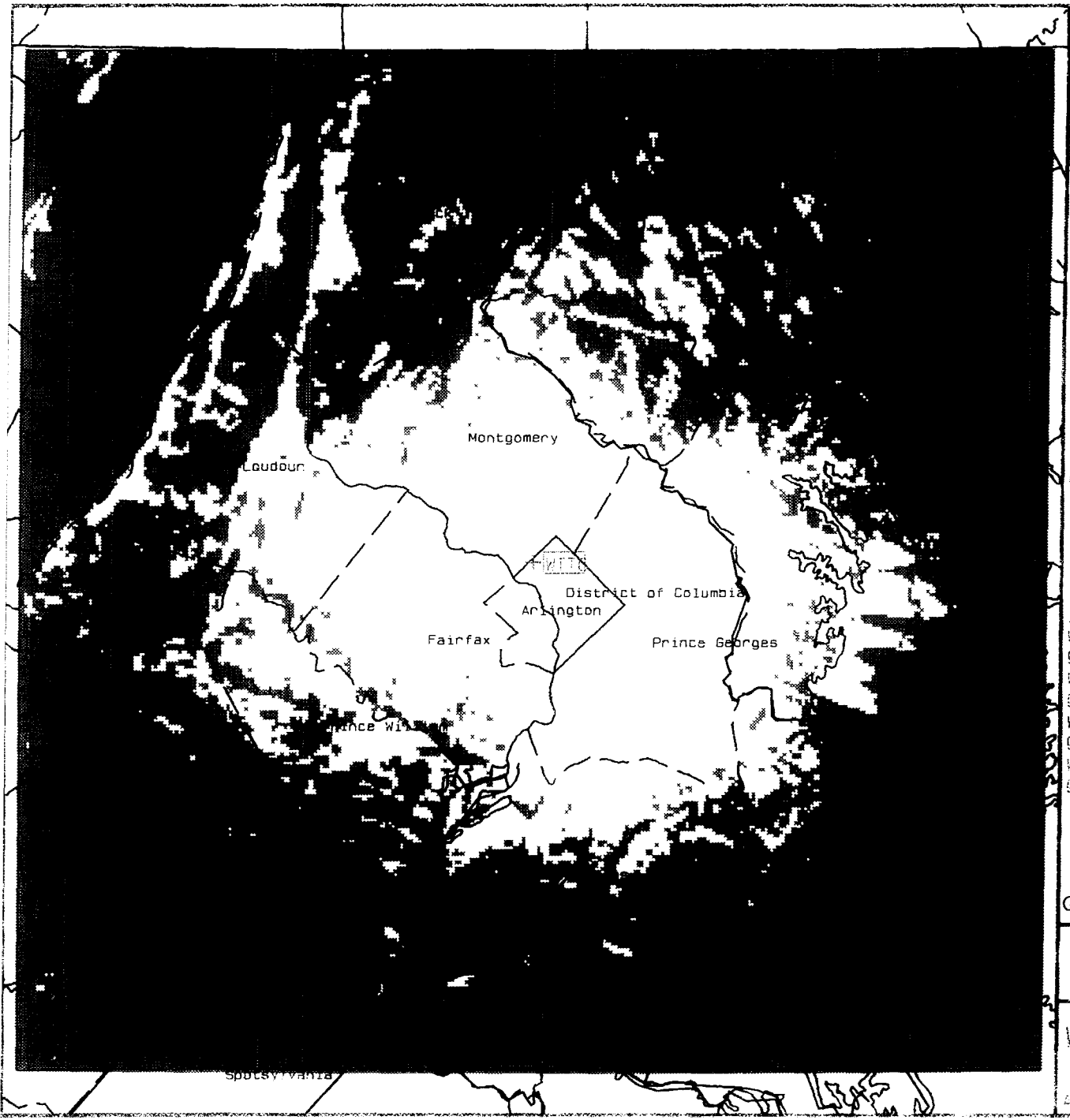
KILOMETERS

20 0 20 40

WTTG-AT Washington, DC

Intrf from NTSC

April 25, 1997 Figure



MSITE(tm):wttg-at

Propagation model: Longley-Rice v1.2.2
Time: 99.00% Loc: 50.00% Margin: 10.0 dB
Climate: Continental Temperate
Gndcvr: USGS-EDC database
Atm. factor: None
K Factor: 1.550
RX Antenna: DA-C:\msite26\lownfrx1.ant
Height: 9.0 mtrs AGL Gain: .0 dBd

D/U ratio - group 1 TXs to group 2 TXs

> 1.0
< 1.0

Minimum threshold level: -150.0 dBm

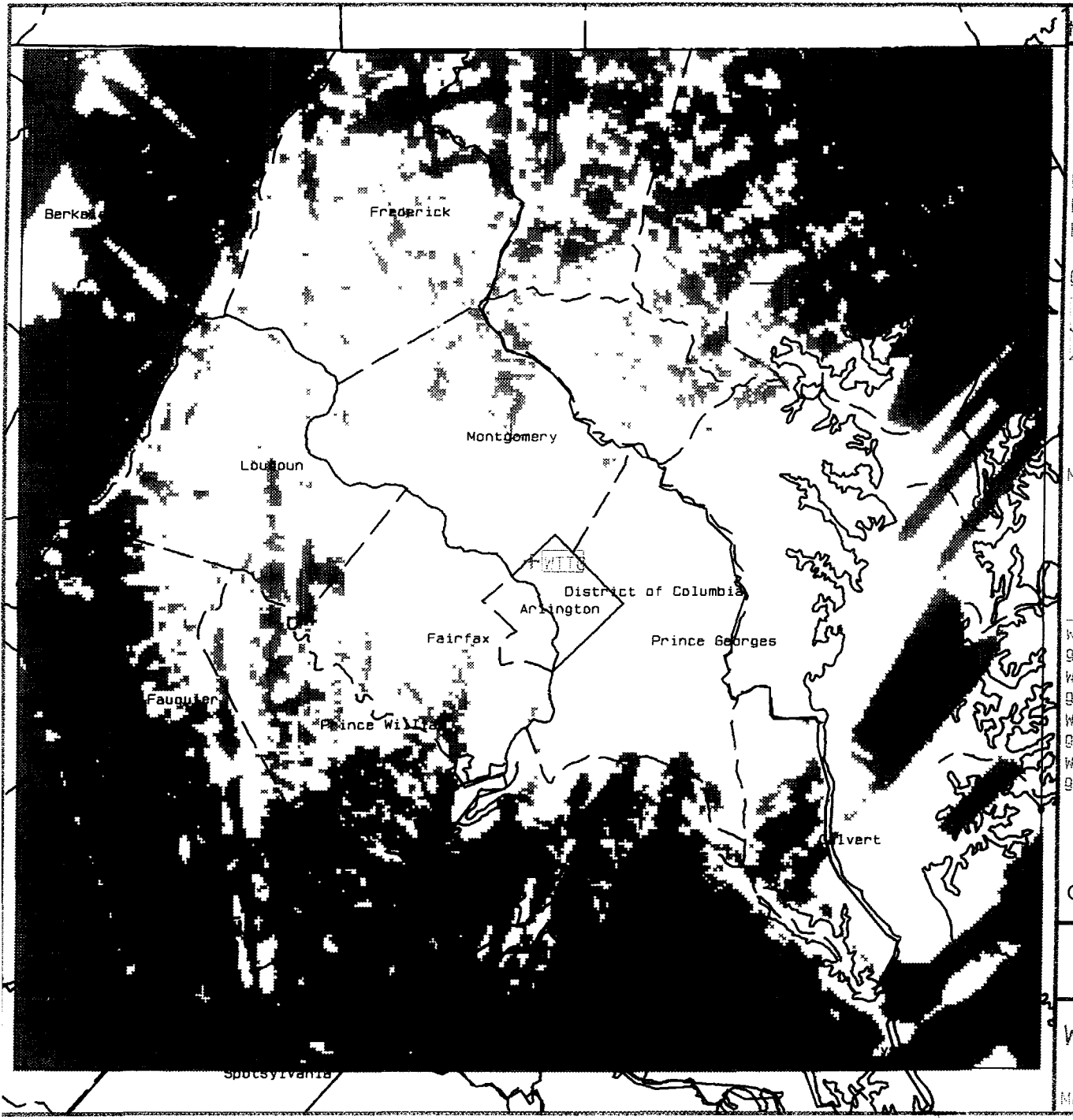
Site	Ant.El. AMSL mtrs	ERPd dBW	Ant. Type /Orient.	Coordinates
WTTG *	315.0	36.20	DA-H	38 57 21.00
grp: 1	85.0000 MHz			77 4 57.00
WTXR	315.0	50.00	DA-H	38 57 34.00
grp: 2	85.0000 MHz			77 26 36.00
WJLA	965.0	48.50	DA-H	38 56 22 12.00
grp: 2	85.0000 MHz			77 3 58.00
WRC/1	486.0	48.75	DA-H	38 56 8 .00
grp: 2	85.0000 MHz			77 4 7.00

EXHIBIT C

GRADE O "U" TIME = 1%

KILOMETERS
20 0 20 40

WTTG-AT Washington, DC
Intrf from NTSC
April 25, 1997 Figure 1



MSITE(tm):wttg-at

Propagation model: Free space + RMD
Time: 99.00% Loc: 50.00% Margin: 10.0 dB
Climate: Continental Temperate
Gndcvr: None
Atm. factor: None
K Factor: 1.550
RX Antenna: DA-c:\msite26\lovhfrx1.ant
Height: 9.0 mtrs AGL Gain: 5.0 dBd

C/I ratio - group 1 TXs to group 2 TXs

> 1.8
< 1.8

Minimum threshold level: -150.0 dBmW

Site	Ant Elv AMSL (mtrs)	ERPd (dBW)	Ant. Type /Orient	Coordinates
WTTG *	315.0	38.20	DM-H	N 38 57 21.00
grp: 1	85.0000 MHz			W 77 4 57.00
WTVR	315.0	50.00	DM-H	N 37 34 00
grp: 2	85.0000 MHz			W 77 28 36.00
WJAC	865.0	48.50	DM-H	N 40 22 17.00
grp: 2	85.0000 MHz			W 78 58 58.00
WPVI	420.0	46.70	DM-H	N 40 2 39.00
grp: 2	85.0000 MHz			W 75 14 27.00

EXHIBIT D

GRADE O "U" TIME = 1%

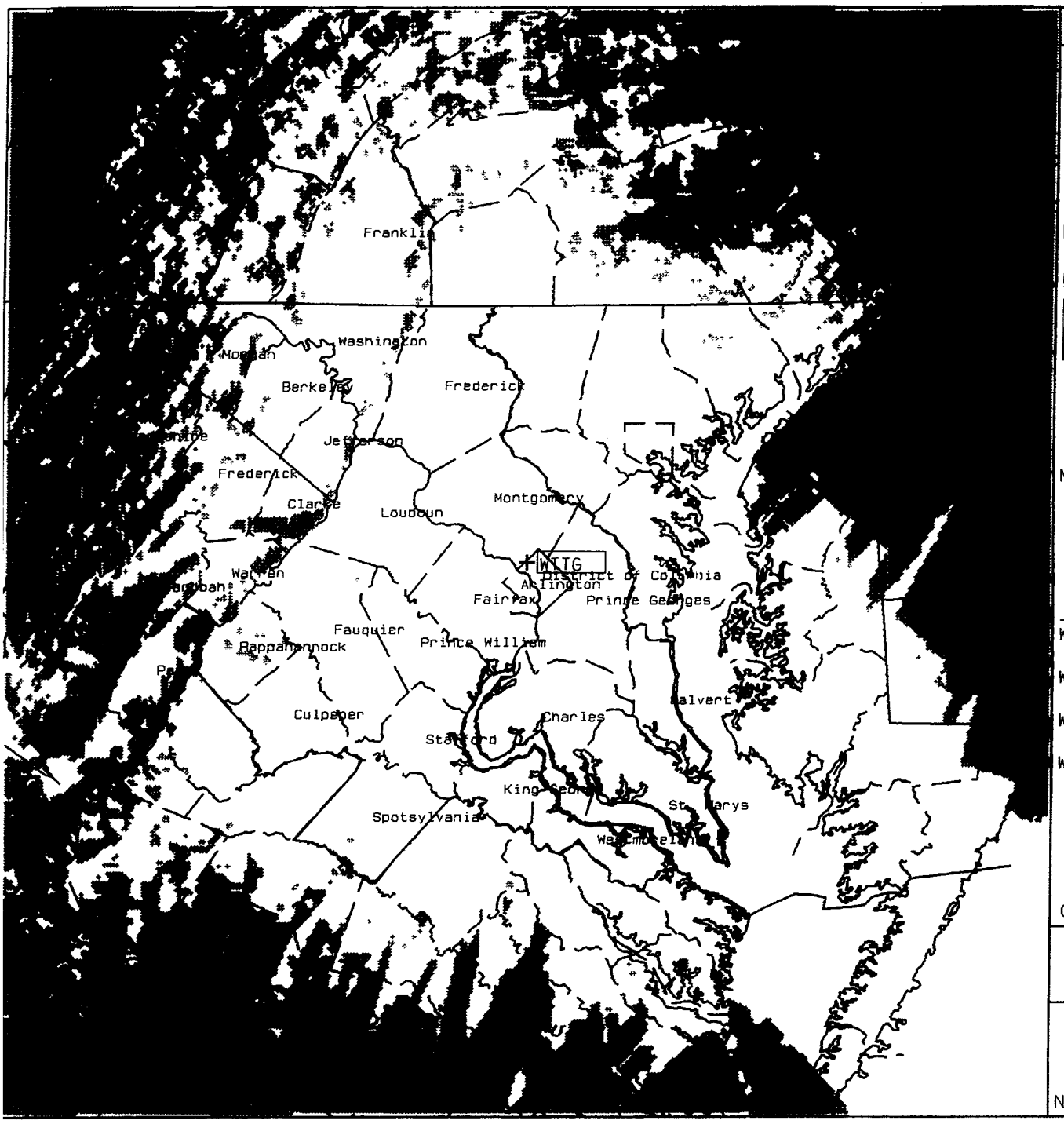
KILOMETERS

20 0 20 40

WTTG-AT Washington, DC

Intrf from NTSC

May 20, 1997 Figure 2



MSITE (tm) - EDX Engineering, Inc.

Propagation model: Free space + RMD
Time: 10.00% Loc: 50.00% Margin: 10.0 dB
Climate: Continental Temperate
Gndcvr: None
Atm. factor: None
K Factor: 1.550
RX Antenna - Type: DA-TX 1 orien.
Height: 9.0 mtrs AGL Gain: 5.0 dBd

C/I ratio: first site to others

> 28.0 dB
< 28.0 dB

Minimum signal level: -100.0 dBmW

Site	Ant Elv AMSL (mtrs)	ERPd (dBW)	Ant. Type /Orient.	Coordinates
WTTG	319.0	50.00	DA-H	N 38 57 21.0
	79.0000 MHz		.0	W 77 4 57.0
WNYW	530.0	42.41	DA-H	N 40 42 43.0
	79.0000 MHz		.0	W 74 0 49.0
WRAL	695.0	50.00	DA-H	N 35 40 35.0
	79.0000 MHz		.0	W 78 32 9.0
WDTV	660.0	50.00	DA-H	N 39 4 27.0
	79.0000 MHz		.0	W 80 25 28.0

EXHIBIT E

GRADE O "U" TIME = 10%

KILOMETERS

50 0 50

WTTG Washington, DC

NTSC Co-Channel Interference

November 11, 1996 Figure 1x

MSITE(tm):wtic_at

Propagation model: Free space + RMD
Time: 50.00% Loc: 50.00% Margin: 10.0 dB
Climate: Continental Temperate
Gndcvr: USGS-EDX database
Atm. factor: None
K Factor: 1.440
RX Antenna: Omni
Height: 3.0 mtrs AGL Gain: .0 dBd

C/I ratio - group 1 TXs to group 2 TXs

> 34.4
< 34.4

Minimum threshold level: -150.0 dBmV

Site	Ant Elv ANSL (mtrs)	EIRP (dBW)	Ant. Type /Orient	Coordinates
WNYW	518.0	42.41	DM-H	N 40 42 48.00
grp: 1	79.0000 MHz			W 74 0 49.00
WTIC	624.0	30.00	DM-H	N 41 42 13.00
grp: 2	79.0000 MHz			W 72 46 57.00

EXHIBIT F

GRADE I "U" TIME = 10%

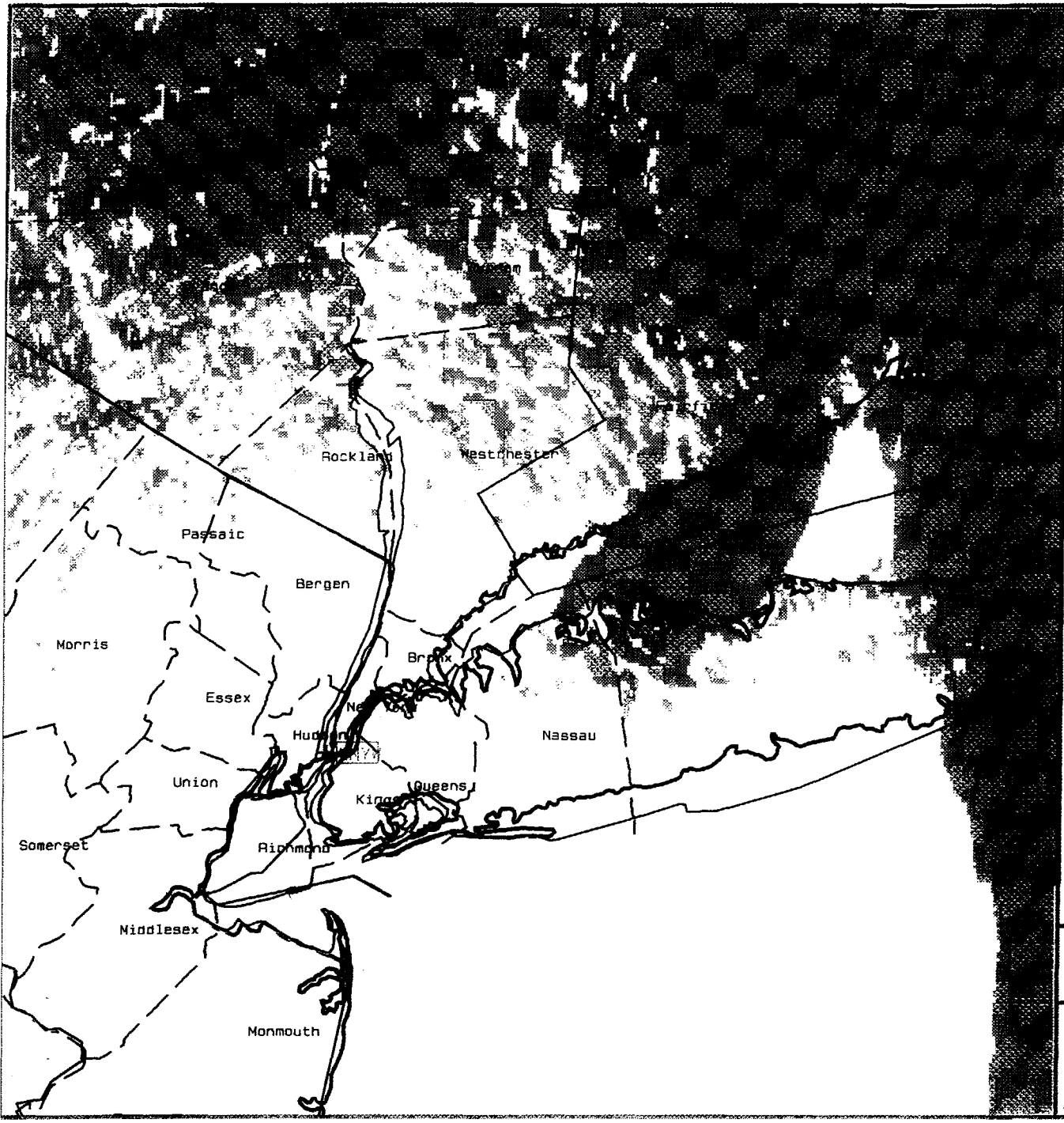
KILOMETERS

20 0 20 40

WNYW New York, NY

Intfr from WTIC-AT Ch 6

April 23, 1997 Figure 1



MSITE(tm):wtic_at

Propagation model: Longley-Rice v1.2.2
Time: 50.00% Loc: 50.00% Margin: 10.0 dB
Climate: Continental Temperate
Gndcvr: USGS-EDX database
Atm. factor: None
K Factor: 1.440
RX Antenna: Omni
Height: 3.0 mtrs AGL Gain: .0 dBd

C/I ratio - group 1 Txs to group 2 Txs

> 34.4
< 34.4

Minimum threshold level: -150.0 dBmW

Site	Ant Elv AMSL (mtrs)	ERPd (dBW)	Ant. Type /Orient.	Coordinates
WNYW *	518.0	42.41	OM-H	N 40 42 43.00
grp: 1	79.0000 MHz			W 74 0 49.00
WTIC	624.0	30.00	OM-H	N 41 42 13.00
grp: 2	79.0000 MHz			W 72 48 57.00

EXHIBIT G

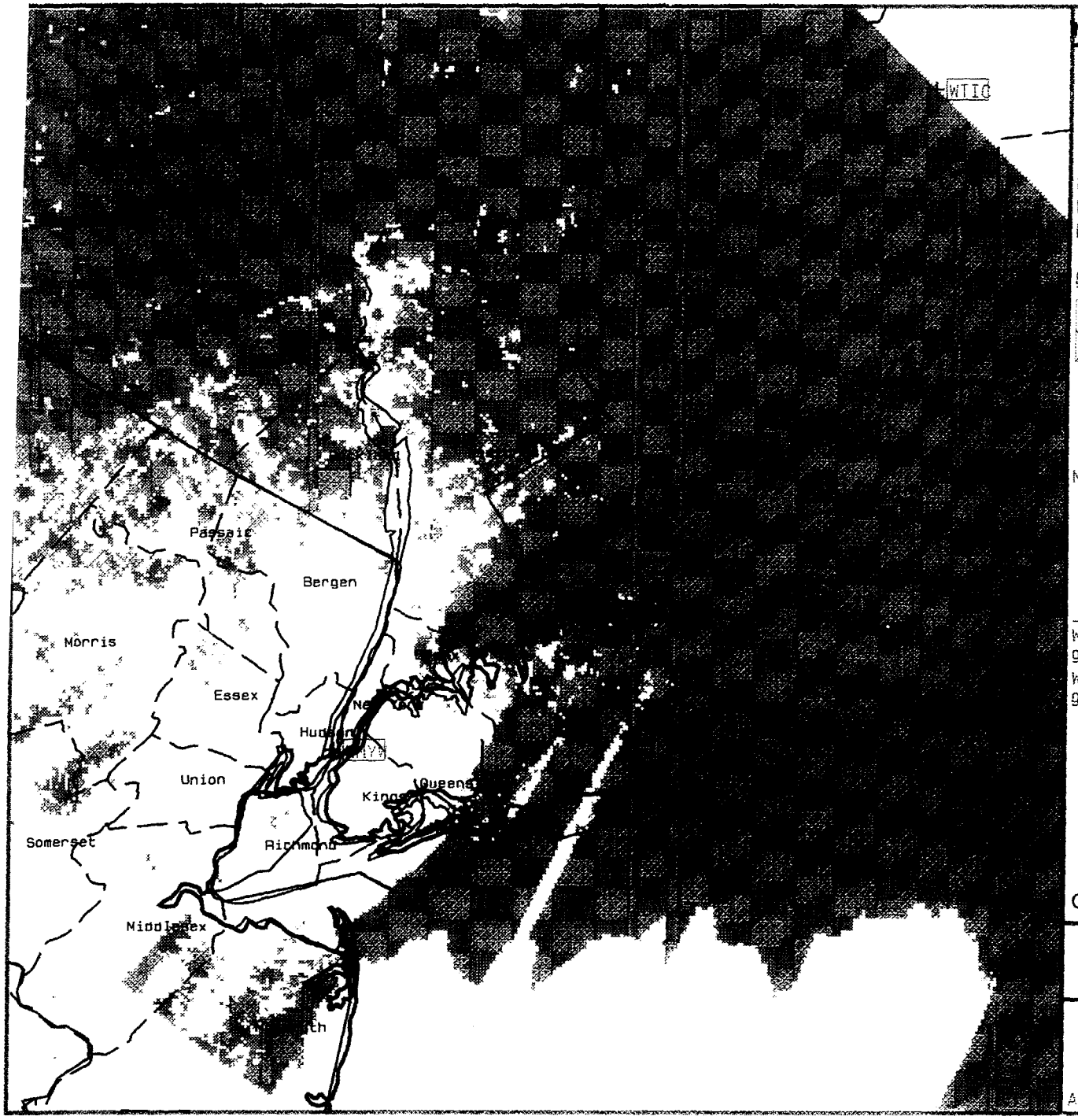
GRADE I "U" TIME = 10%

KILOMETERS
20 0 20 40

WNYW New York, NY

Intfr from WTIC-AT Ch 5

April 23, 1997 Figure 1



MSITE(tm):wtic_at

Propagation model: Free space + RMD
Time: 50.00% Loc: 50.00% Margin: 10.0 dB
Climate: Continental Temperate
Gndcvr: USGS-EDX database
Atm. factor: None
K Factor: 1.440
RX Antenna: DA-c:\msite26\lovhfrx1.ant
Height: 9.0 mtrs AGL Gain: .0 dBd

C/I ratio - group 1 TXs to group 2 TXs

> 34.4
< 34.4

Minimum threshold level: -150.0 dBmW

Site	Ant Elv AMSL (mtrs)	ERPd (dBW)	Ant. Type /Orient.	Coordinates
WNYW *	518.0	42.41	DM-H	N 40 42 43.00
grp: 1	79.0000 MHz			W 74 0 49.00
WTIC	624.0	30.00	DM-H	N 41 42 13.00
grp: 2	79.0000 MHz			W 72 48 57.00

EXHIBIT H

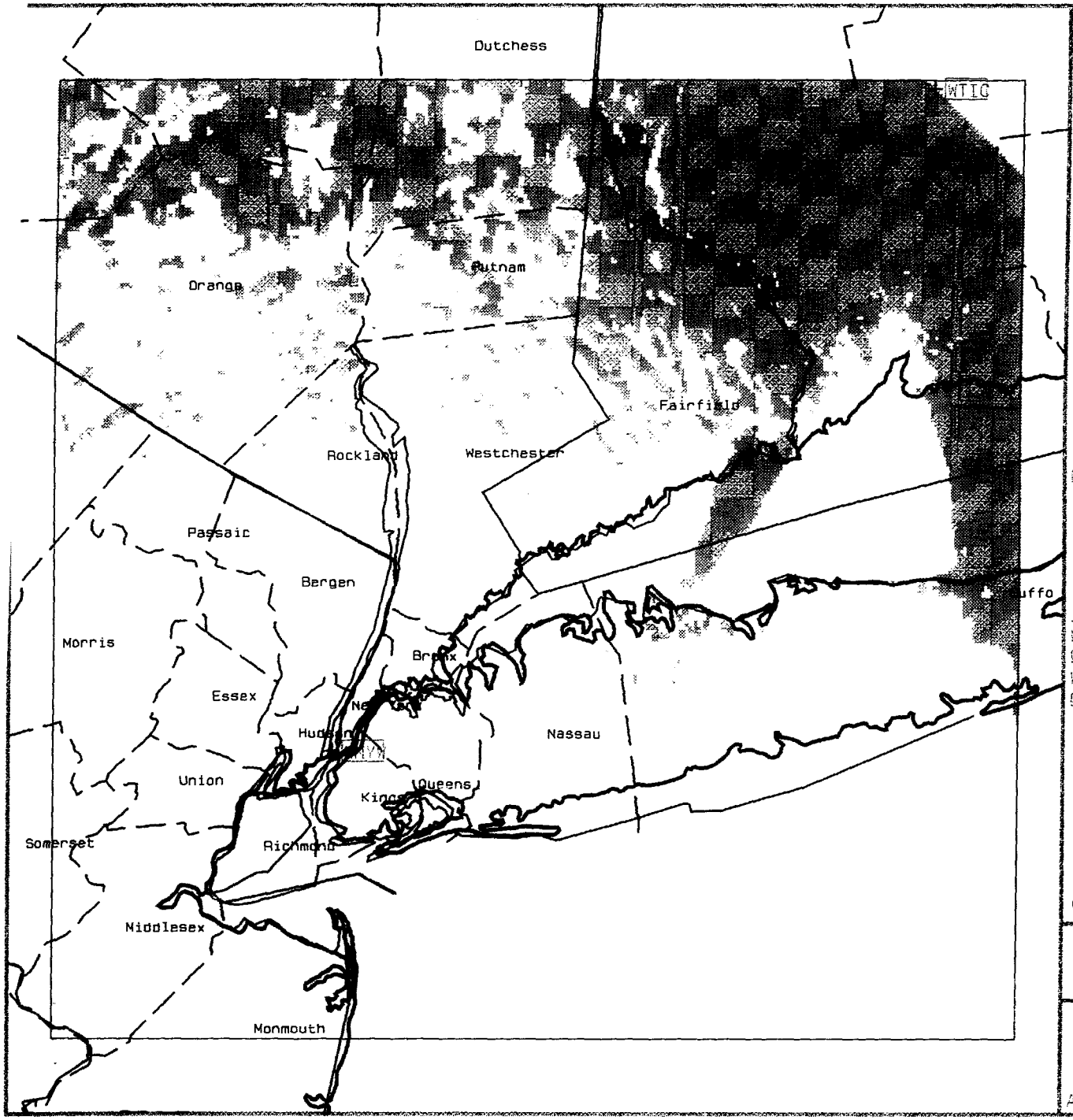
GRADE O "U" TIME = 10%

KILOMETERS
20 0 20 40

WNYW New York, NY

Intfr from WTIC-AT Ch 5

April 28, 1997 Figure 1



MSITE(tm):wtic_at

Propagation model: Longley-Rice v1.2.2
Time: 50.00% Loc: 50.00% Margin: 10.0 dB
Climate: Continental Temperate
Gndcvr: None
Atm. factor: None
K Factor: 1.440
RX Antenna: DA-c:\msite26\lovnfrx1.ant
Height: 9.0 mtrs AGL Gain: .0 dBd

C/I ratio - group 1 TXs to group 2 TXs

> 34.4
< 34.4

Minimum threshold level: -150.0 dBmW

Site	Ant Elv AMSL (mtrs)	ERPd (dBW)	Ant. Type /Orient	Coordinates
WNYW *	518.0	42.41	DM-H	N 40 42 43.00
grp: 1	79.0000 MHz			W 74 0 49.00
WTIC	624.0	30.00	DM-H	N 41 42 13.00
grp: 2	79.0000 MHz			W 72 49 57.00

EXHIBIT I

GRADE O "U" TIME = 10%

KILOMETERS
20 0 20 40

WNYW New York, NY

Intfr from WTIC-AT Ch 5

April 28, 1997 Figure 1

MSITE(tm) - EDX Engineering, Inc.

Propagation model: Free space + RMD
Time: 10.00% Loc: 50.00% Margin: 10.0 dB
Climate: Continental Temperate
Gndcvr: None
Atm. factor: None
K Factor: 1.550
RX Antenna - Type: DA-TX 1 orien.
Height: 9.0 mtrs AGL Gain: 5.0 dBd

C/I ratio: first site to others

> 28.0 dB
< 28.0 dB

Minimum signal level: -100.0 dBmW

Site	Ant Elv AMSL (mtrs)	ERPd (dBW)	Ant. Type /Orient.	Coordinates
WNYW	530.0	42.41	DA-H	N 40 42 43.0
	79.0000 MHz		.0	W 74 0 49.0
WTVH	580.0	50.00	DA-H	N 42 57 19.0
	79.0000 MHz		.0	W 76 6 34.0
WCVB	365.0	50.00	DA-H	N 42 18 37.0
	79.0000 MHz		.0	W 71 14 14.0
WTTG	318.0	50.00	DA-H	N 38 57 21.0
	79.0000 MHz		.0	W 77 4 57.0

EXHIBIT J

GRADE O "U" TIME = 10%

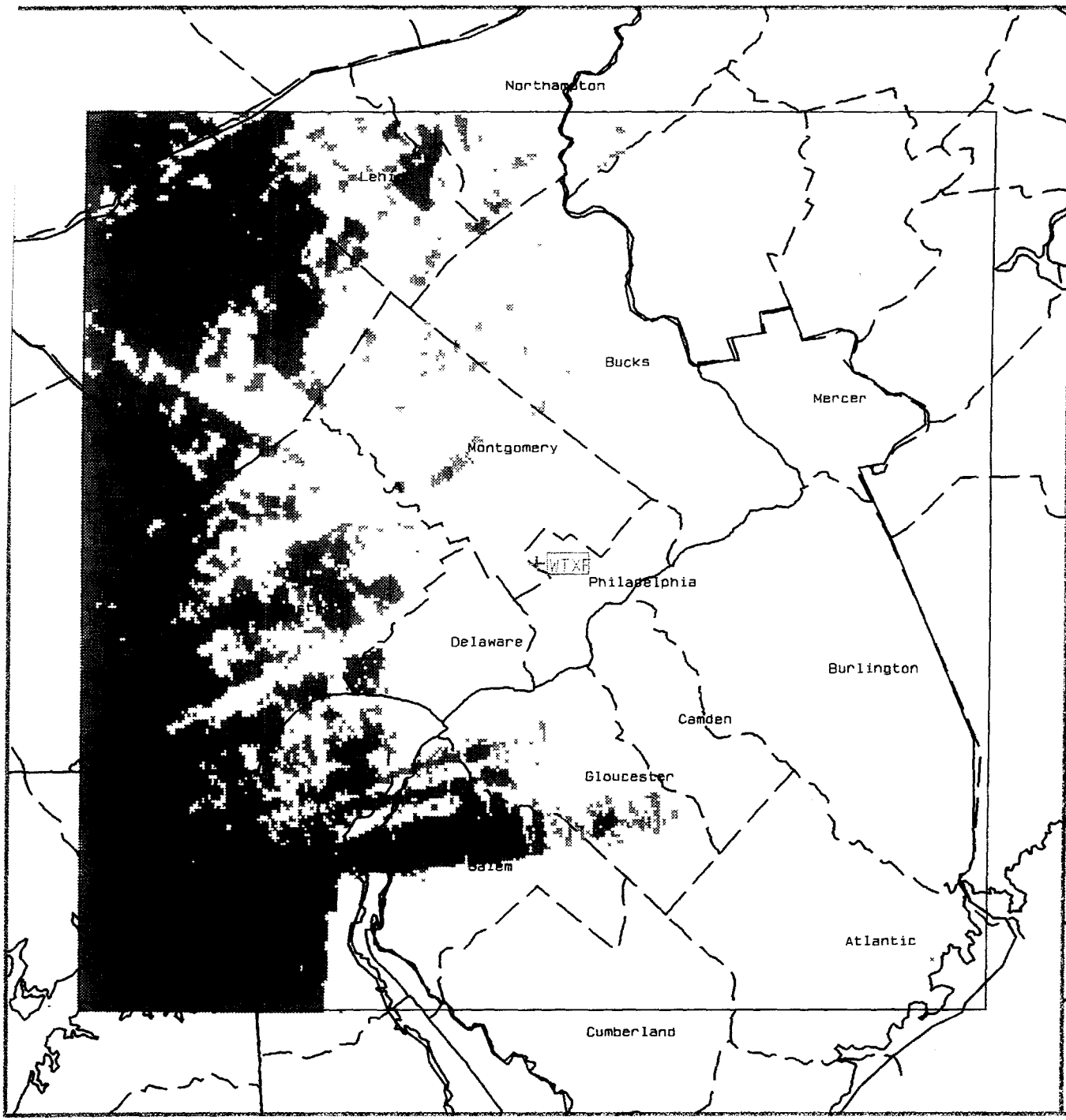
KILOMETERS

50 0 50

WNYW New York, NY

NTSC Co-Channel Interference

November 11, 1996 Figure 1x



MSITE(tm):wtxf

Propagation model: Free space + PMD
Time: 50.00% Loc: 50.00% Margin: 10.0 dB
Climate: Continental Temperate
Gndcvr: USGS-EDX database
Atm. factor: None
K Factor: 1.500
RX Antenna: Omni
Height: 3.0 mtrs AGL Gain: .0 dBd

C/I ratio - group 1 TXs to group 2 TXs

> 34.4
< 34.4

Minimum threshold level: -150.0 dBmW

Site	Ant Elv AMSL (mtrs)	ERPd (dBW)	Ant. Type /Orient	Coordinates
WTXF *	430.0	67.00	OM-H	N 40 2 26.00
grp: 1	563.0000 MHz			W 75 14 20.00
WMPB	410.0	47.00	OM-H	N 39 27 1.00
grp: 2	563.0000 MHz			W 76 46 37.00

EXHIBIT K

GRADE I "U" TIME = 10%

KILOMETERS
20 0 20 40

WTXF Philadelphia, PA

Intfr frm WMPB-AT

April 25, 1997 Figure 1